

ABSTRACT

Rebinning methods and arrangements are provided that significantly improve the 3D wavelet compression performance of the image based rendering data, such as, e.g., concentric mosaic image data. Through what is essentially a selective cutting and pasting process the image data is divided into stripes that are then used to form a set of multi-perspective panoramas. The rebinning process greatly improves the performance of the cross shot filtering, and thus improves the transform and coding efficiency of 3D wavelet codecs. While the region of support after rebinning may cease to be rectangular in some cases, a padding scheme and an arbitrary shape wavelet coder can be implemented to encode the result data volume of the smart rebinning. With an arbitrary shape wavelet codec, the rebinning outperforms MPEG-2 by 3.7dB, outperforms direct 3D wavelet coder by 4.3dB, and outperforms a reference block coder (RBC) by 3.2dB on certain tested concentric mosaic image scenes. Hence, the rebinning process nearly quadruples the compression ratio for selected scenes. Additional methods and arrangements are provided that include selectively dividing the image data into slits and rebinning the slits into a huge 2D array, which is then compressed using conventional still image codecs, such as, JPEG.

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